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⑲ 発 明 者 小 早 川 嘉 神奈川県川崎市中原区今井上町53番地 キヤノン株式会社
小杉事業所内

⑳ 出 願 人 キヤノン株式会社 東京都大田区下丸子3丁目30番2号

㉑ 代 理 人 弁理士 日比谷 征彦

明 細 書

1. 発明の名称

レフラクトメータ

2. 特許請求の範囲

1. 被検眼の眼底に瞳孔中心部からスポット光束を投影する投影光学系と、眼底による前記スポット光束の反射光束を瞳孔の周辺部からリング形状で取り出して、二次元エリアセンサ上に導く撮影光学系とを有することを特徴とするレフラクトメータ。

3. 発明の詳細な説明

〔産業上の利用分野〕

本発明は、眼科や眼鏡店等で眼球の屈折値を測定するために用いられるレフラクトメータに関するものである。

〔従来技術〕

従来から、被検眼瞳孔周辺部からリング状光束を被検眼の眼底に照射して、その眼底からの反射光束をCCD等のエリアセンサ上に結像させて、リ

ング状光束の寸法及び形状の変化により眼屈折値を得る測定方法が知られている。しかし、このような方法を用いたレフラクトメータでは、眼底の中心部を使用して測定していないので、眼底中心部と周辺部で屈折値の異なるような被検眼を測定する場合には、正確な値を算出することが困難である。

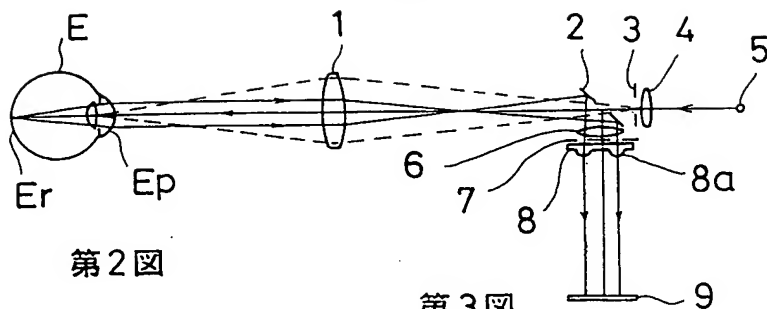
〔発明の目的〕

本発明の目的は、上述の従来例の欠点を除去し、眼底に眼底中心部から光を入射し、眼底からの反射光束を用いて高精度な眼屈折値の測定を可能としたレフラクトメータを提供することにある。

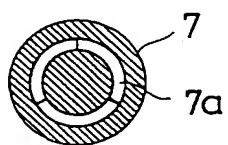
〔発明の概要〕

上述の目的を達成するための本発明の要旨は、被検眼の眼底に瞳孔中心部からスポット光束を投影する投影光学系と、眼底による前記スポット光束の反射光束を瞳孔の周辺部からリング形状で取り出して、二次元エリアセンサ上に導く撮影光学系とを有することを特徴とするレフラクトメータで

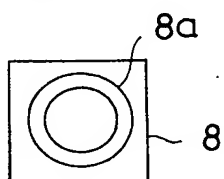
第1図



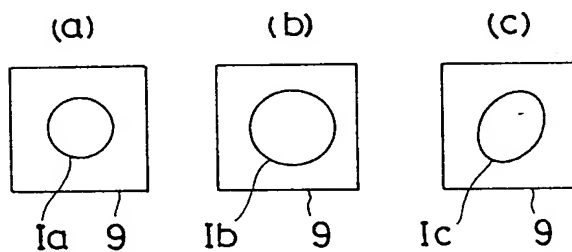
第2図



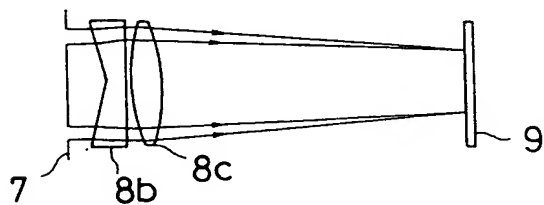
第3図



第4図



第5図



PATENT ABSTRACTS OF JAPAN

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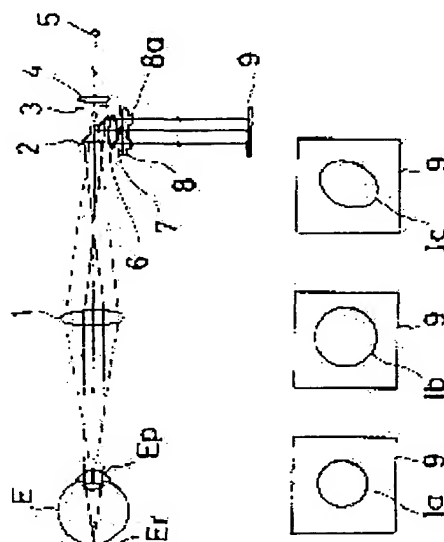
(72)Inventor : KOBAYAKAWA YOSHI

(54) REFLECTOMETER

(57)Abstract:

PURPOSE: To calculate a highly accurate ophthalmic refraction value, by irradiating the center part of an eyeball and that of the eyeground with spot light and taking out the reflected luminous flux thereof from the periphery of the pupil to form ring-shaped luminous flux and forming an image on an area sensor.

CONSTITUTION: The luminous flux emitted from a light source 1 passes through a lens 4, a circular iris 3 and the aperture part of a perforated mirror 2 and further passes through the center part of the pupil Ep of an eye E to be examined to project spot like luminous flux on the eyeground Er. The reflected luminous flux thereof again passes through an objective lens 1 and is reflected by the perforated mirror 2 to obtain a ring-shaped image on an area sensor 8 by an image forming optical member 8 through a lens 6 and a ring-shaped iris 7. The dimension and shape of the ring-shaped image obtained on the area sensor 9 are changed according to the degree of pseudomyopia, hypermetropia or astigmatism and, for example, in the case of hypermetropia, a ring-shaped image Ib having a diameter larger than that of the ring-shaped image Ia in the case of stigmatism is obtained and, in the case of astigmatism, a ring-shaped image Ic becomes oval and a degree of astigmatism can be calculated from the ratio of the long and short diameters of an oval and the angle thereof can be calculated from the diameter line direction of the oval.



LEGAL STATUS

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REFLECTOMETER

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EC Classification:
Equivalents:

Abstract

PURPOSE:To calculate a highly accurate ophthalmic refraction value, by irradiating the center part of an eyeball and that of the eyeground with spot light and taking out the reflected luminous flux thereof from the periphery of the pupil to form ring-shaped luminous flux and forming an image on an area sensor.

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